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REPLY BRIEF Address to: Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	Application Number	10/804,938
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	Attorney Docket No.	10031165-1
	Filing Date	March 19, 2004
	First Named Inventor	John Link
	Examiner	Crow, Robert
	Group Art	1637
	Title: *Devices and Methods for Isolating RNA*	

Sir:

This Reply Brief is in response to the Examiner's Answer mailed by the Office on December 4, 2007.

Please charge any required fees to Deposit Account No. 50-1078, order number 10031165-1.

REPLY BRIEF

In this Reply Brief, the Appellants address several issues raised in the Examiner's Answer. The Appellants note that all arguments presented in the prior Appeal Brief still apply with equal force, but are not reiterated here solely in the interest of brevity and for the convenience of the Board.

Membrane is not an obvious substitution for glass wool plug

In the Examiner's Answer dated December 4, 2007, the Examiner maintained the rejection of the claims over Sambrook in view of Wang '742, Wang '727 and Pall Life Sciences. In maintaining this rejection, the Examiner continued to assert that it would be obvious to one of ordinary skill in the art to modify the pipette disclosed by Sambrook to incorporate the membrane of Wang and arrive at the claimed invention.

However, Sambrook's structure being equated by the Examiner to an isolation column is a pipette plugged with glass wool and filled with oligo dT cellulose. The Examiner's position relies on the equation of Sambrook's glass wool plug with a membrane.

The American Heritage Dictionary defines "wool" as follows:

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wool (wŏŏl) Pronunciation Key

n.

1.

a. The dense, soft, often curly hair forming the coat of sheep and certain other mammals, such as the goat and alpaca, consisting of cylindrical fibers of keratin covered by minute overlapping scales and much valued as a textile fabric.

b. A material or garment made of this hair.

2. The furry hair of some insect larvae, such as the caterpillar.

3. A filamentous or fibrous covering or substance suggestive of the texture of true wool.

As such, glass wools is a filamentous material in which the fibers are made of

glass.

The American Heritage Dictionary defines "membrane" as:

American Heritage Dictionary – Cite This Source – Share This

mem·brane (mĕm'brān') Pronunciation Key
n.

1. *Biology*
   a. A thin, pliable layer of tissue covering surfaces or separating or connecting regions, structures, or organs of an animal or a plant.
   b. Cell membrane.
2. A piece of parchment.
3. *Chemistry* A thin sheet of natural or synthetic material that is permeable to substances in solution.

As such, a membrane is a thin sheet.

As is apparent from the above definitions, wool is not the same as a membrane. These two articles have different structures. In view of these different structures, they would be expected to have different functions.

Because of these known different structures, one of ordinary skill in the art would not modify the pipette of Sambrook to employ a membrane instead of glass wool. One would not make such a modification because there is no evidence that the membrane of Wang '742 would work instead of the glass wool plug in the Sambrook structure. Wang '742 teaches that the membrane is good for filtering blood cells from plasma. There is no evidence that the Wang '742 membrane would work in a situation where it was combined with oligo dT-cellulose in a pipette. Furthermore, the oligo dT-cellulose, which is taught by Sambrook to be essential, could have plugged the pores in the Wang '742 membrane thereby rendering the Sambrook's separation pipette unusable.

As yet further evidence that it would not be obvious to modify the Sambrook structure to incorporate the membrane of Wang instead of the glass wool plug, it is

noted that Sambrook was published in 1999, the same year as Wang '742. Accordingly, membranes were known in the art at the time of publication of Sambrook. However, there is no indication in Sambrook that a membrane would be a suitable alternative for the glass wool plug.

As such, one of ordinary skill in the art would not modify Sambrook to employ a membrane instead of the glass wool plug. One of ordinary skill in the art would not make such a modification because there would be no reason to view a membrane as the equivalent of a glass wool plug in the Sambrook structure. There would be no reason to view a membrane and glass wool plug as equivalent because the filamentous structure of wool is structurally different from the sheet structure of a membrane. In addition, Sambrook itself provides no indication that a membrane could work the same as the glass wool plug, even though membranes were known at the time Sambrook was published.

Membranes of claims are limited to ones that do not include an active binding agent

The instant claims are directed to a method wherein the "cRNA isolation column comprises a membrane selected from the group consisting of polysulfone treated with hydroxypropylcellulose, PVDF (polyvinylidene fluoride), nylon, nitrocellulose, polysulfone, polysulfone and polyvinylpyrrolidone, PVP (polyvinylpyrrolidone), and composites thereof." The use of the transitional phrase "consisting of" excludes any element, step, or ingredient not specified in the claim phrase. *In re Gray*, 53 F.2d 520, 11 USPQ 255 (CCPA 1931). Because the listed membranes are passive separation membranes, the closed claim language excludes membranes that have an active binding agent associated therewith.

The Examiner asserts at page 9 of the Examiner's answers that the limitation that the membranes are passive membranes is an element not recited in the claims. The Applicants respectfully disagree. As pointed out above, the membrane of the column must be chosen from a specified closed list. The list does not include membranes that have an active separation component, such as oligo dT.

Accordingly, the claims exclude structures such as glass wool plug/oligo dT, where an active binding agent is present.

Since modification of Sambrook with Wang '742 would still result in a structure that includes the active binding agent of oligo dT cellulose (since Sambrook teaches this active binding agent is essential) the references fail to teach or suggest the claimed invention in which the membrane does not include an active binding agent.

In view of the foregoing discussion, the Applicants request that all remaining rejections be reversed and that the application be remanded to the Examiner with instructions to issue a Notice of Allowance.

Respectfully submitted,

Date: February 4, 2008

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